What is claimed is:

1. An impedance matching circuit comprising:

an input node adapted to receive an input signal from an amplifier circuit;

an output node adapted to couple an output signal to a transmission circuit;

a first capacitive element electrically coupled in parallel with said output node and having a capacitance C;

an inductor and a transmission line electrically coupled between and in series with the input node and the output node, said transmission line having a length selected in combination with the inductor to provide a predetermined amount of inductance, L;

wherein values of L and C provide an impedance substantially equal to an input impedance of the transmission circuit at a first frequency.

2. The apparatus of Claim 1, wherein the inductor has a first end electrically connected to said input node receiving said input signal output by the amplifier circuit and a second end electrically connected to the transmission line, and the transmission line has a first end electrically connected to the second end of the inductor and a second end electrically connected to the output node of the impedance matching circuit, and wherein the capacitor is electrically connected to the transmission line such that the length of the transmission line between the second end of the inductor and the capacitor is selected to, in combination with the inductor, provide the predetermined amount of inductance.

3. The apparatus of Claim 2, wherein the transmission line comprises a conductor over a ground plane on a printed circuit board, and the capacitive element is mounted on the PCB.

4. The apparatus of Claim 3, wherein the transmission line comprises a co-planar grounded waveguide.

5. The apparatus of Claim 4, wherein the capacitive element comprises a shorted waveguide electrically connected to an projecting substantially perpendicularly from the transmission line.

6. The apparatus of Claim 2, further comprising a second capacitive element electrically connected to the transmission line and in parallel with the first capacitive element, and a first switch for electrically coupling the second capacitive element to ground, wherein the second capacitive element is electrically coupled to the transmission line such that the length of the transmission line between the second end of the inductor and the second capacitive element is selected to, in combination with the inductor, provide a second predetermined amount of inductance, L', such that L' and C are selected to provide an impedance equal to the input impedance of the transmission circuit at a second frequency.

7. The apparatus of Claim 6, further comprising a second switch for electrically decoupling the first capacitive element from ground to electrically remove the first capacitive element from the impedance matching circuit.

8. The apparatus of Claim 6, wherein the switch is a single pole double throw switch capable of alternately electrically decoupling the first and second capacitive elements to alternately remove the first or second capacitive element from the impedance matching circuit.

9. A method of matching an output impedance of an amplifier circuit to an input impedance of a transmission circuit, comprising:

providing a series combination of an inductor and a transmission line coupled between and in series with an output of the amplifier circuit

and an input of the transmission circuit, the transmission line having a length selected, in combination with the inductor, to provide a predetermined amount of inductance, L; and

electrically coupling a first capacitive element to an in parallel with the output of the amlifier circuit, the capacitive element having a capacitance C, so that L and C provide an impedance substantially equal to an input impedance of the transmission circuit at a first frequency.

10. The method of Claim 9, wherein the inductor has a first end connected to an output of the amplifier circuit and a second end connected to the transmission line, and the transmission line has a first end connected to the second end the inductor and a second end connected to the output of the impedance matching circuit, wherein the step of electrically coupling the first capacitive element to and in parallel with the output of the amplifier circuit comprises electrically connecting the first capacitive element to the transmission line such that the length of the transmission line between the second end of the inductor and the first capacitive element is selected to, in combination with the inductor, provide the predetermined amount of inductance.

11. The method of Claim 10, wherein the transmission line comprises a conductor over a ground plane on a printed circuit board, and the step of electrically coupling the first capacitive element to and in parallel with the output of the amplifier circuit comprises mounting the first capacitive element on the printed circuit board such that a first end of the first capacitive element is electrically connected to the conductor of the transmission line and a second end of the first capacitive element is electrically connected to the ground plane.

12. The method of Claim 10, further comprising:

electrically connecting a second capacitive element to the transmis-

sion line and in parallel with the first capacitive element such that the length of the transmission line between the second end of the inductor and the second capacitive element is selected to, in combination with the inductor, provide a second predetermined amount of inductance, L'; and

electrically coupling the second capacitive element to the ground plane through a switch;

wherein the inductance L' and the capacitance C provide an impedance substantially equal to the input impedance of the transmission circuit at a second frequency.

13. The method of Claim 12, wherein the switch comprises a single pole double throw switch capable of alternately electrically decoupling the first and second capacitive elements from the ground plane, and electrically coupling the second capacitive element to the ground plane comprises electrically decoupling the first capacitive element from the ground plane.

14. A transceiver for use in a wireless communication system, the transceiver comprising:

an amplifier circuit for amplifying signals transmitted by the transceiver;

a transmission circuit for transmitting signals transmitted by the transceiver, the transmission circuit including an antenna; and

an impedance matching circuit electrically coupled between and in series with an output of the amplifier circuit and an input of the transmission circuit, the impedance matching circuit comprising:

a first capacitive element electrically coupled to and in parallel with the output of the amplifier circuit, the capacitive element having a capacitance C;

a series combination of an inductor and a transmission line electri-

cally coupled between and in series with the input of the transmission circuit and the output of the amplifier circuit, the transmission line having a length selected, in combination with the inductor, to provide a predetermined amount of inductance, L;

wherein L and C are selected to provide an impedance equal to the input impedance of the transmission circuit at a first frequency.

15. The apparatus of Claim 14, wherein the inductor has a first end electrically connected to an output of the amplifier circuit and a second end electrically connected to the transmission line, and the transmission line has a first end connected to the second end of the inductor and a second end connected to the output of the impedance matching circuit, wherein the first capacitive element is electrically connected to the transmission line such that the length of the transmission line between the second end of the inductor and the first capacitive element is selected to, in combination with the inductor, provide the predetermined amount of inductance.

16. The apparatus of Claim 15, wherein the transmission line comprises a conductor over a ground plane on a printed circuit board, and the capacitive element is mounted on the printed circuit board.

17. The apparatus of Claim 16, wherein the transmission line comprises a co-planar grounded waveguide.

18. The apparatus of Claim 17, wherein the first capacitive element comprises a shorted waveguide electrically connected to and projecting from the transmission line.

19. The apparatus of Claim 15, further comprising a second capacitive element electrically connected to the transmission line and in parallel with the first

capacitive element, and a switch for electrically coupling the second capacitive element to ground, wherein the second capacitive element is electrically connected to the transmission line such that the length of the transmission line between the second end of the inductor and the second capacitive element is selected to, in combination with the inductor, provide a second predetermined amount of inductance, L', such that L' and C are selected to provide an impedance equal to the input impedance of the transmission circuit at a second frequency.

20. The apparatus of Claim 19, wherein the switch is a single pole double throw switch for alternately electrically decoupling the first and second capacitive elements to alternately remove the first or second capacitive element from the impedance matching circuit.

21. An impedance matching circuit comprising:

an input node for receiving an input signal from an amplifier circuit;

an output node for coupling an output signal to a transmission circuit;

a capacitive element electrically coupled in parallel with said output node and having a capacitance C;

an inductor and a transmission line electrically coupled between and in series with the input node and the output node, the transmission line having a length selected in combination with the inductor to provide a predetermined amount of inductance, L, values of L and C being selected to provide in impedance substantially equal to an input impedance of the transmission circuit at a frequency;

said inductor having a first end electrically connected to said input node and a second end electrically connected to the transmission line, said transmission line having a first end electrically connected to the second end

of the inductor and a second end electrically connected to the output node of the impedance matching circuit, and the capacitive element being electrically connected to the transmission line such that the length of the transmission line between the second end of the inductor and the capacitive element is selected to, in combination with the inductor, provide the predetermined amount of inductance;

wherein the transmission line comprises a conductor over a ground plane on a printed circuit board in the form of a co-planar grounded waveguide, the capacitive element being mounted on the printed circuit board, and the capacitive element comprising a shorted waveguide electrically connected to the transmission line.

22. A method of matching an output impedance of an amplifier circuit to an input impedance of a transmission circuit, comprising:

providing a series combination of an inductor and a transmission line coupled between and in series with an output of the amplifier circuit and an input of the transmission circuit, the transmission line having a length selected, in combination with the inductor, to provide a predetermined amount of inductance, L, the transmission line comprising a conductor over a ground plane on a printed circuit board;

electrically coupling a first capacitive element to and in parallel with the output of the amplifier circuit, the capacitive element having a capacitance C, so that L and C provide an impedance substantially equal to an input impedance of the transmission circuit at a frequency;

the inductor having a first end connected to an output of the amplifier circuit and a second end connected to the transmission line, and the transmission line having a first end connected to the second end of the inductor and a second end connected to the impedance matching circuit,

wherein the first capacitive element is electrically connected to the transmission line such that the length of the transmission line between the second end of the inductor and the first capacitive element is selected to, in combination with the inductor, provide the predetermined amount of inductance;

mounting the first capacitive element on the printed circuit board such that a first end of the capacitive element is electrically connected to the conductor of the transmission line and a second end of the first capacitive element is electrically connected to the ground plane;

electrically connecting a second capacitive element to the transmission line in parallel with the first capacitive element such that the length of the transmission line between the second end of the inductor and the second capacitive element is selected to, in combination with the inductor, provide a second predetermined amount of inductance, L', L' and C providing an impedance substantially equal to the input impedance of the transmission circuit at a second frequency; and

electrically coupling the second capacitive element to the ground plane and electrically decoupling the first capacitive element from the ground plane through a single pole double throw switch capable of alternately electrically decoupling the first and second capacitive elements from the ground plane.